

REMARKS

Claim 17 was amended to correct a minor typographical error.

35 U.S.C. § 103 Rejections

Claim 1

The Examiner has rejected Claim 1 as being unpatentable over Rabinowitz et al. (U.S. Patent 5,325,002) in view of Gamble et al. (U.S. Patent 5,777,420). The Examiner concedes that Rabinowitz does not explicitly teach a superconducting winding, and further acknowledges that Rabinowitz's support member (rotor) is not laminated (Office action dated 1/9/08, p. 2).

Regarding the second point, the Examiner states that although the support member disclosed by Rabinowitz is not laminated, Gamble teaches a superconducting motor that includes an iron core comprising stacked laminations, and suggests that it would have been obvious to combine Gamble's laminated iron core with Rabinowitz's support member to obtain the superconducting electric motor disclosed in claim 1. We disagree. We submit that the superconducting electric motor disclosed in claim 1 is not taught or suggested by Rabinowitz or Gamble, either alone or in combination. In particular, neither patent describes or suggests a laminated support member that supports the superconducting winding, as recited in claim 1.

Gamble fails to teach a laminated *support member*. Instead, Gamble discloses a *core member* 50 that can be formed as a stacked set of laminations 52 (Gamble col. 4, lines 31-32). Gamble teaches the existence of a torque tube 20 that supports four superconducting winding assemblies; the core member 50 is positioned within the inner volume of the torque tube (Gamble col. 3, lines 15-16):

“In a preferred embodiment, the iron core is formed as a series of stacked laminations 52. The high strength torque tube is typically heated to allow the tube to thermally expand. The stacked laminations 52 ... are placed within the inner volume of the tube in its heated state. The torque tube is then allowed to cool so that the tube shrinks around the laminations capturing them in a compressed state within the tube.” (Gamble col. 4, lines 34-38).

This description is inconsistent with a laminated support member, as it is the torque tube that supports the superconducting windings and the core, formed inside the torque tube, which is laminated. The superconducting windings 30 are secured directly to the torque tube 20 by pole caps; the core member 50 does not support the windings (Gamble col. 3, lines 51-52). Gamble's laminations serve to minimize cracking in the iron core member: if a crack initiates in one of the laminations, "the crack is isolated to that lamination and will not propagate to neighboring laminations" (Gamble col. 4, lines 45-51). In contrast, the superconducting electric motor disclosed in claim 1 teaches a laminated *support member* that directly supports the superconducting winding. For example, in one embodiment as shown in Applicant's Figs. 1 and 2, a support member 20 has an outer surface 22 with four stepped profiles 24, and where "Each stepped profile 24 supports one of four superconducting winding assemblies 30" (Specification p. 7, lines 16-23). The support member itself is laminated (Specification p. 11, lines 11-13) and has the advantage of reducing eddy currents that arise when the stator field and the rotor are not in phase, as occurs when the motor is operated in induction mode (Specification p. 11, lines 14-18). Thus, even if, as the Examiner suggests, "it would have been obvious to modify Rabinowitz and provide a laminated rotor core per Gamble", we submit that one still would not have arrived at the idea of a laminated support member that supports the superconducting windings.

For at least the reasons given above, we submit that claim 1 is allowable without the need to address the issue of whether Rabinowitz explicitly teaches a superconducting winding.

Since claims 3-16 and 21-22 depend from claim 1, we submit that they are also patentable for at least the same reason that claim 1 is patentable.

Claim 17

The Examiner has rejected claim 17 as being unpatentable over Rabinowitz in view of Gamble and Renard (U.S. Patent 3,904,901). Since claim 17 includes the same

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limitation of a laminated support member as does claim 1, we submit that claim 17 is patentable for at least the same reason that claim 1 is patentable.

Since claims 18-20 depend from claim 17, we submit that they are also patentable for at least the same reason that claim 17 is patentable.


Conclusion

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Please apply any charges or credits to Deposit Account No. 50-4189, referencing Attorney Docket No. 30020-082001.

Respectfully submitted,

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